








# Work Order ID 66010

Tuesday, February 01, 2011 1:21:02 PM


Page 1

Item ID:	D3391-025	Accept		Setup	Start	
Revision ID:						
Item Name:	Aft Tube Assembly				Stop	
Start Date:	2/2/2011	Start Qty:	1.00		Cust Item ID:	
Required Date:	2/16/2011	Req'd Qty:	1.00		Customer:	
Reference:						


Approvals:	Process Plan:	<u>mk</u>	Date:	<u>11-02-01</u>	Tooling:		Date:		Run	Start	
	QC:		Date:		SPC (Y/N):		Date:			Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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<b>Draw Nbr</b>	<b>Revision Nbr</b>								
D3391	Rev H/ DEO								

100		0.00							
	MORI SEIKI CNC LATHE LARGE								
Mori Seiki	<b>Memo</b>	0.00							
Mori Seiki CNC Lathe Large	Turn as per Folio FA599 Rev: <u>AA</u> & Dwg D3391 Rev: <u>H</u>								
	***scribe batch # on fwd end at 90 degree***								

SL 11/02/07

110		0.00							
	QC2- Inspect parts off machine FAI/FAIB								
QC	<b>Memo</b>	0.00							
Quality Control									

SL 11/02/07

111		0.00							
	QC8- Inspect parts - second check								
QC	<b>Memo</b>	0.00							
Quality Control									

SL 11/02/08

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3391-025 PAR #: N/A Fault Category: Machined NCR: Yes No DQA: LA Date: 11.03.01  
 Resolution: Acceptable Disposition: use as-is QA: N/C Closed: OK Date: 11/03/02

NCR: <u>66010</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
11.02.07	100	I.D. OF MACHINED END IS 3.545 instead of 3.500.	<u>CP</u> 11.02.07 <u>PS/072</u>	Acceptable. Not high stress area of tube.	<u>SL</u> 11/02/07	<u>SL</u> 11/02/23	<u>CP</u> 11.02.07 <u>PS/072</u>	<u>SL</u> 11/02/23

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

**Work Order ID 66010**

Tuesday, February 01, 2011 1:21:02 PM

Page 3

Item ID: D3391-025

Accept

Setup Start

Revision ID:

Stop

Item Name: Aft Tube Assembly

Start Date: 2/2/2011 Start Qty: 1.00

Cust Item ID:

Required Date: 2/16/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

150



Skidtubes

Skidtubes

0.00

Memo

0.00

1-Drill ( PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

11-2-22

160



CNC Bend 1

BENDING MACHINE - SKIDTUBES

0.00

Memo

0.00

Form as per Dwg D3391 Using Bend Prog 3391025

11-2-22

170



QC

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Quality Control

JE 01/02/22

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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**NOTE:** Date & initial all entries

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Tuesday, February 01, 2011 1:21:02 PM

Page 4

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Start Date: 2/2/2011 Start Qty: 1.00

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

180



Skidtubes

Skidtubes

Skidtubes

Memo

0.00

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill float bag holes using DT8809 as per Dwg D3391(Holes marked "A" Only)

3-Drill wearplate holes as per Dwg D3391 using DT8878(Mid Tube) & DT8217  
Wearplate Jig.

\*\*\*\*\*Do Not Open To Finished Size\*\*\*\*\*

4-Drill Wearshoe holes as per DWG D3391 using DT8939 locating from 2  
previously drilled aft wearplate holes.

5-Open wearplate holes to 0.250" and c'bore as per dwg D3391

6-Open up all wearshoe, wearplate to 0.297" and float bag holes to 0.328" as per  
Dwg D3391.

7-Deburr

11-2-22

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Tuesday, February 01, 2011 1:21:02 PM

Page 5

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Customer:

Reference:

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

190

QC5- Inspect part completeness to step on W/O

0.00

0.00 8/11/02/23



QC

Memo

Quality Control

200

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

Hand Finishing

X1

11/02/23

210

QC3- Inspect Part Finish

0.00



QC

Memo

Quality Control

1 0 BE 11/02/23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Tuesday, February 01, 2011 1:21:02 PM

Page 6

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Run Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

220

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

Instal spacers as per dwg D3391

A/R Magnabond 6898 Batch: m116227exp. date: 08/2011

cure time 12hrs as per QSI0015

230

0.00



QC

QC5- Inspect part completeness to step on W/O

Memo

0.00

Quality Control

235

0.00



HandFinish

Pressure Wash per QSI005 4.3

Memo

0.00

Hand Finishing

AND REALODINE AS PER PAR09-043

m116227 > BE 11/02/23

m116227 11 02 24 ①

1 0 11/02/24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Tuesday, February 01, 2011 1:21:02 PM



Page 7

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Revision ID:

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Start Date: 2/2/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/16/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

240

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

M 115951

0.00

Powder Coating

START TIME: 8:30

OVEN TEMPERATURE: 320°

FINISH TIME: 9:00

1 R 11-2-25

250

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

1 0 R 11/02/28

260

HandFinishing

0.00



HandFinish

Memo

0.00

Hand Finishing

✓ 1-Install inserts as per Dwg D3391

✓ 2-Install Aft Cap as per Dwg D3391

A/R Sikaflex-241/-291 11/15/14

Sikaflex expiry date: 11/01

1 0 R 11/02/28

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Tuesday, February 01, 2011 1:21:02 PM



Page 8

Item ID: D3391-025

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Setup Start



Revision ID:

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Item Name: Aft Tube Assembly

Start Date: 2/2/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/16/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

270



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

8/11/20

H

280



Packaging

Packaging

Identify as per dwg &amp; Stock Location: \_\_\_\_\_

0.00

Memo

0.00

C/4/28

290



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

11/02/28  
MF  
1102-28

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries

Tuesday, February 01, 2011 1:20:54 PM

[illegible][illegible]

**Required Qty: 1.00**

<b>Comments:</b>	IPP Rev B	06-02-07	ECN773 dwg rev. D	EC	
	IPP Rev:C	06-03-28	Update Manuf. Instructions	JLM	□ □ □ □
	IPP rev D	07.03.20	revF dwg	EC	
	IPP rev E	07.11.07	rev G dwg ecn 1053p	EC	verified by: DD
	IPP Rev:F	07-11-13	ECN 1056	DD	verified by: EC
	IPP Rev:G	08-09-10	revH as per dwg	DD	verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6014-090  ALUMINUM EXTRUSION		Manufactured	No			100	Each	26.0000	1	1		11/02/08	
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				LG				26					
					56572			26					
D3670-4-200  SPACER		Manufactured	No			230	Each	56.0000	4	4		BE 11/02/23	
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				LG				56					
					57349			34					
					63317			22					

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

# Picklist Print

Tuesday, February 01, 2011 1:20:54 PM

Work Order ID: 66010



Parent Item: D3391-025



Parent Item Name: Aft Tube Assembly

Start Date: 2/2/2011

Required Date: 2/16/2011

Start Qty: 1.00

Required Qty: 1.00

D2646

Manufactured No

270

Each

83.0000

1

1



all 11/02/28

Aft Cap

Location

Loc Qty

Loc Code

FP-4

13

57332

13

xl

FP6

16

52663

3

62678

12

63633

1

Return 2010

54

62678

54

D3537-1

Manufactured No

270

Each

54.0000

1

1



all 11/02/28

Wearpad

Location

Loc Qty

Loc Code

FP017

54

B65057

xl

64424

54

D3537-7

Manufactured No

270

Each

17.0000

1

1



all 11/02/28

Wearpad

Location

Loc Qty

Loc Code

FP16

17

56831

9

65146

8

xl

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Parent Item: D3391-025



Parent Item Name: Aft Tube Assembly

Start Date: 2/2/2011

Required Date: 2/16/2011



Start Qty: 1.00

Required Qty: 1.00

D3553-1	Manufactured	No	270	Each	29.0000	1	1
							<u>HL 1102125</u>
Gasket							



<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP	29	
33868	1	
<u>56568</u>	28	<u>Y1</u>

D3553-3	Manufactured	No	270	Each	33.0000	1	1
							<u>HL 1102125</u>
Gasket							

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP	33	
<u>53480</u>	33	<u>Y1</u>

D3672-1	Manufactured	No	270	Each	1,307.000	2	2
							<u>HL 1102125</u>
Phenolic Washer							

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

ST077	1307	
42329	10	
<u>52505</u>	297	<u>Y2</u>
64177	1000	

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Page 4

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Parent Item: D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 2/2/2011

Required Date: 2/16/2011

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-130

Purchased

No

260

Each

729.0000

14

14



Insert



11/02/28

Location

Loc Qty

Loc Code

PKG11

480

M115581

✓ 14

114723

480

ST281

114

116049

114

ST282

96

110511

10

115911

86

ST381

39

114654

39

ALS4-1032-225

Purchased

No

270

Each

4,024.000

12

12



Insert



11/02/28

Location

Loc Qty

Loc Code

PK011

4024

110768

4024

✓ 12

AN3C4A

Purchased

No

270

Each

2,072.000

6

6



BOLT



11/02/28

Location

Loc Qty

Loc Code

ST350

2072

115300

25

116075

947

116590

100

116704

1000

✓ 6

Tuesday, February 01, 2011 1:20:55 PM

Shop Packet Print

Page 4

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

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Start Date: 2/2/2011

Required Date: 2/16/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C5A Purchased No

270

Each

946.0000

4

4



11/02/25

Bolt

Location

Loc Qty

Loc Code

ST350

946

114330

11

115015

13

115371

18

115422

100

115594

6

115835

198

116419

500

116549

100

11/02/25

AN960C10L NAS1149C0332 Purchased No

270

Each

25.0000

10

10



11/02/25

washer

Location

Loc Qty

Loc Code

ST245

25

107534

25

1110304

11/02/25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	66010
<b>Description:</b> Float Skidtube (412)		<b>Part Number:</b>	D3391-3
<b>Inspection Dwg:</b> D3391 <b>Rev:</b> H		<b>Page 1 of 1</b>	

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article      ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
14.000	+/-0.010	14.00	✓		m-tape	
3.500	+/-0.010	3.545	✓	✓	VRM JL-3	
88.93	+/-0.030	88.937	✓		m-tape	
44.995	+/-0.030	45.00	✓		m-tape	
Ø3.200	+/-0.010	3.203	✓		mic, CNC-05	
88.93	+/-0.030	88.937	✓		m-tape	
Ø3.750	+/-0.010	3.748	✓		VRM JL3	
30° x 160" chamfer	+/-0.010					

**Measured by:** JL      **Date:** 11/02/07

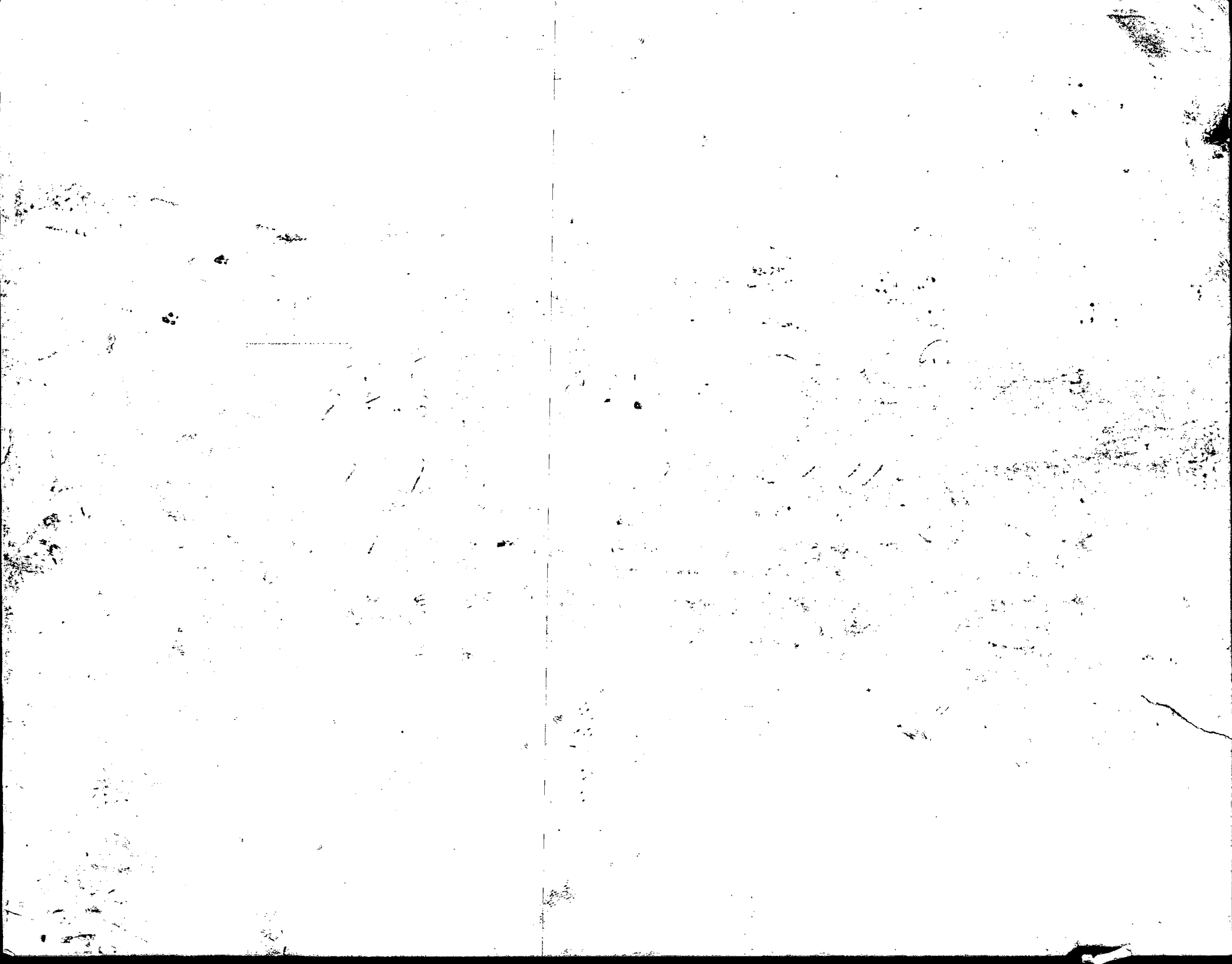
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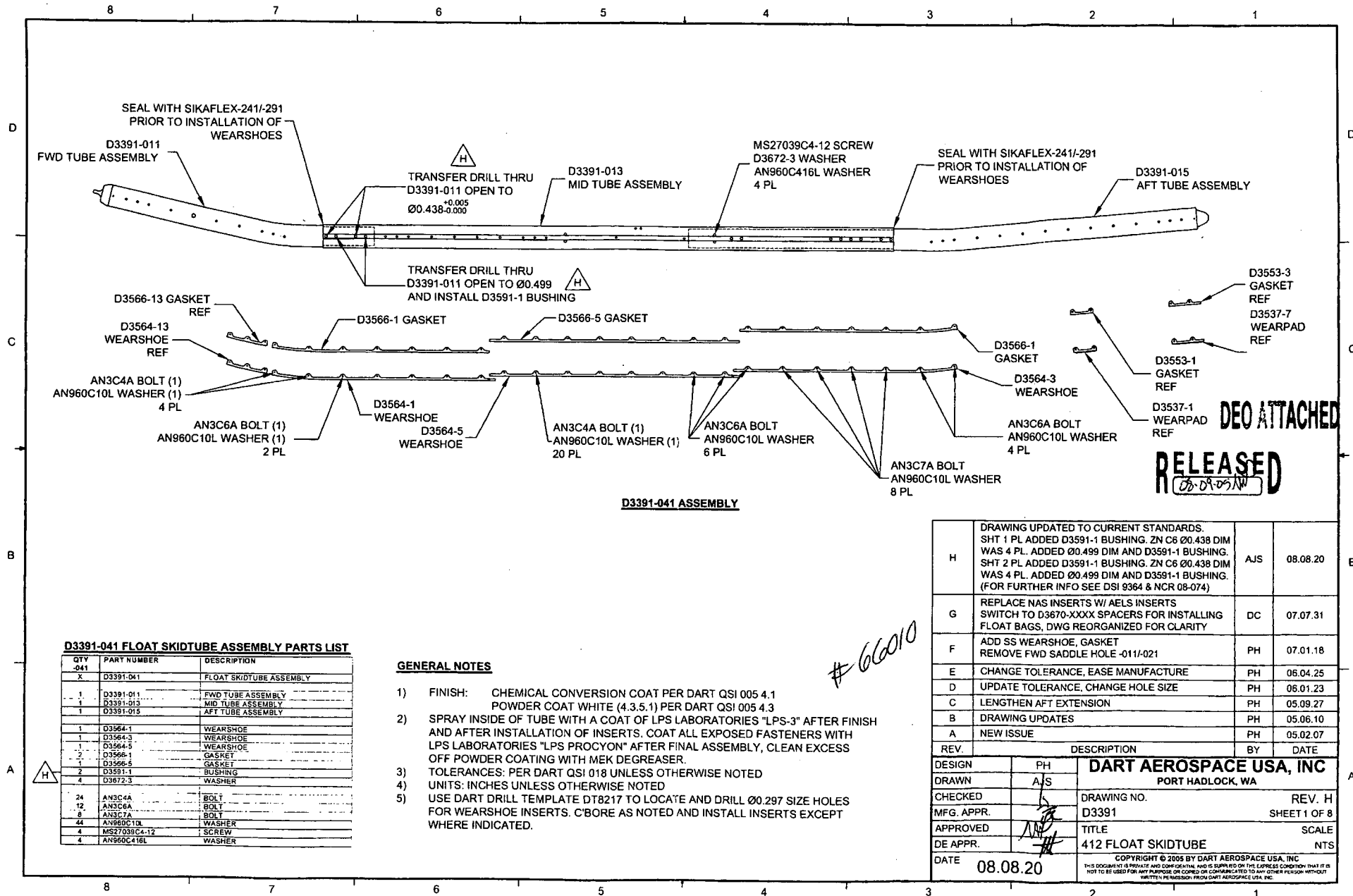
HAAS Section						
1.526	+0.000/-0.030	1.505	✓		VRM CNC-02	
7.500	+/-0.010	7.498	✓		"	
27.750	+/-0.010	27.750	✓		m-tape	
31.750	+/-0.010	31.750	✓		"	
35.250	+/-0.010	35.250	✓		"	
3.300	+/-0.010	3.302	✓		VRM CNC-02	
0.200	+/-0.010	0.200	✓		"	
3.520	+/-0.010	3.524	✓		"	
0.687	+0.010/-0.000	0.694	✓		"	
R0.062	+/-0.010	0.062	✓		R.G.	
Ø0.484	+0.005/-0.001	0.487	✓		"	

**Measured by:** JL      **Date:** 11/02/14

**Audited by:** [Signature]      **Date:** 11.2.15

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue      P/O D3391-015/-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/EC/DD	
F	09.04.27	Dimensions updated per Rev H and NCR09-028	KJ/JLM	
G	09.11.16	Dimension 0.200 removed	KJ	[Signature]





DEO ATTACHED

RELEASED  
08-09-2010

H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	<b>DART AEROSPACE USA, INC</b> PORT HADLOCK, WA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 1 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

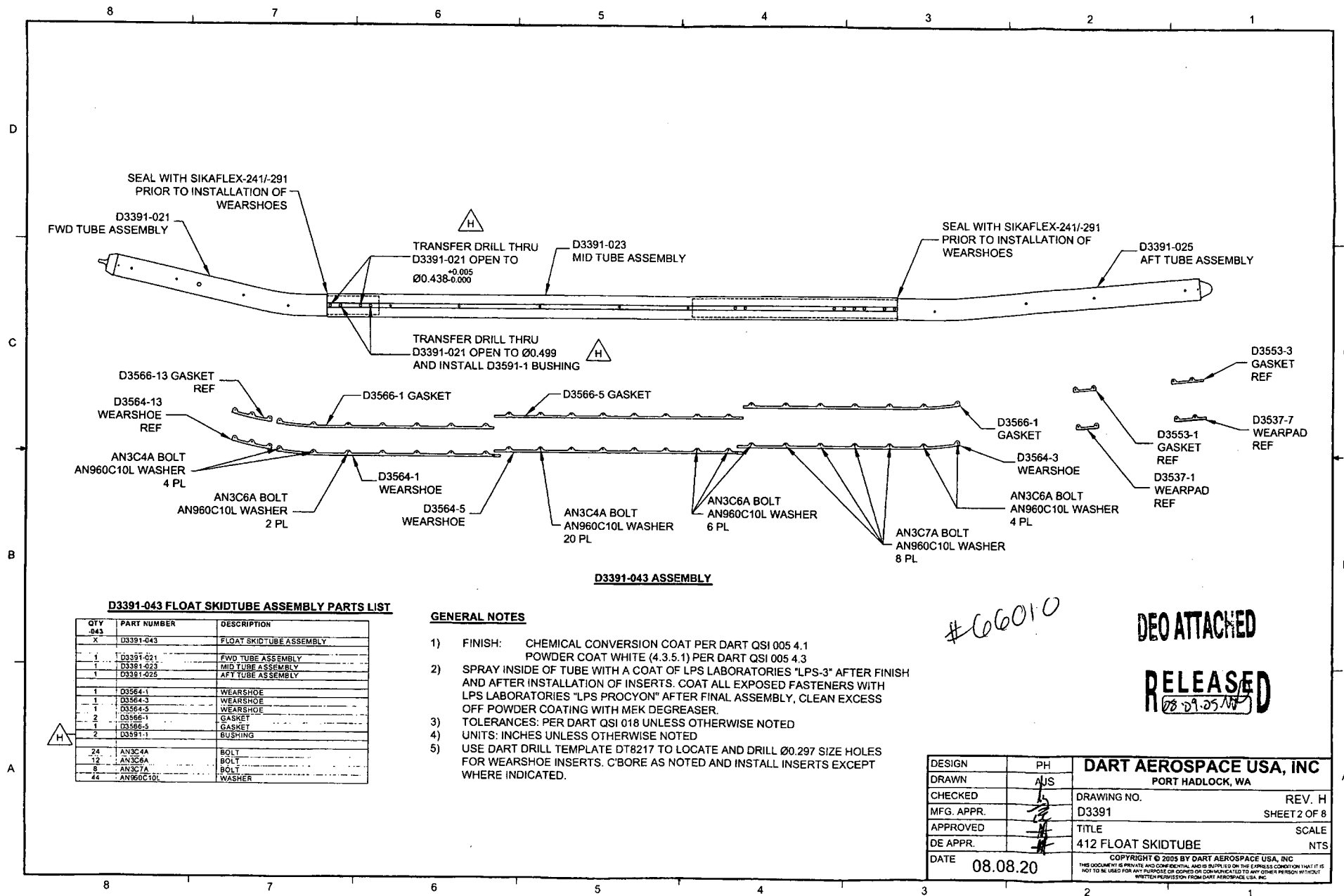
W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



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RELEASE  
08-09-05

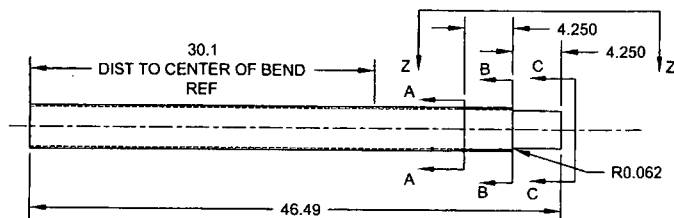
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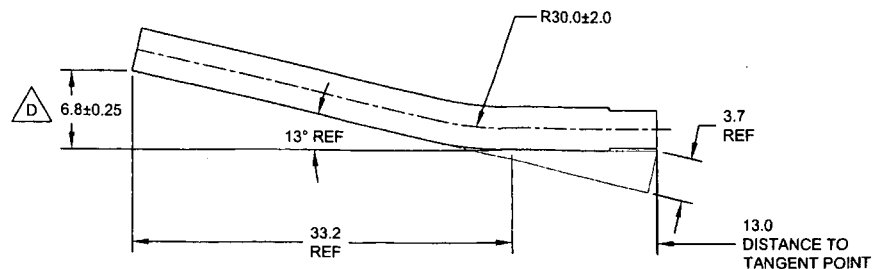
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

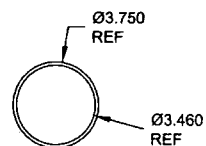
**NOTE:** Date & initial all entries



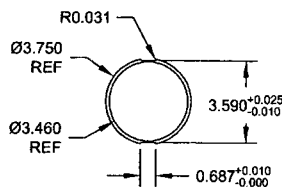
**D3391-1 CUTTING DETAIL**  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



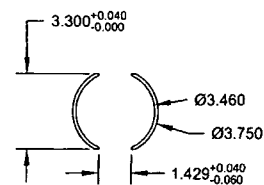
**D3391-011/-021 BENDING DETAIL**  
(MAKE FROM D3391-1)



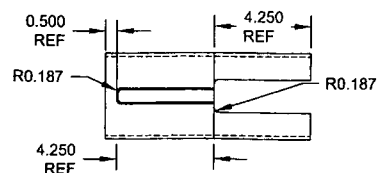
**SECTION A-A**  
SCALE 2X



**SECTION B-B**  
SCALE 2X







**SECTION C-C**  
SCALE 2X



**VIEW Z-Z**  
SCALE 2X

#66010

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28-05-11

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MFG. APPR.		D3391	SHEET 3 OF 8
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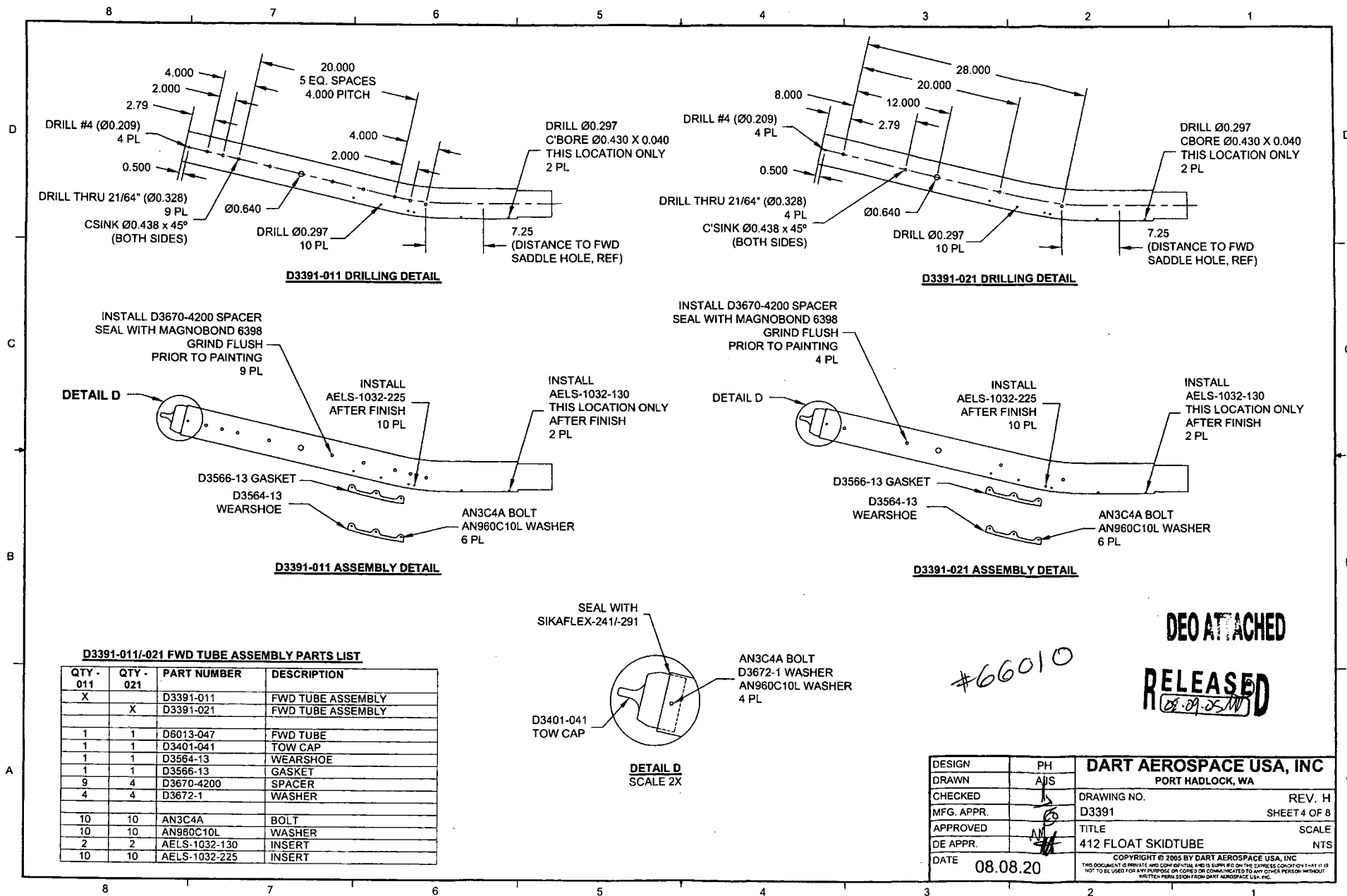
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

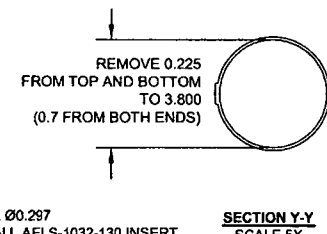
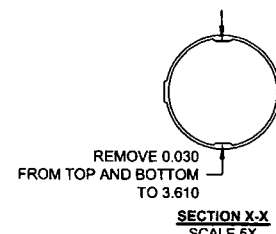
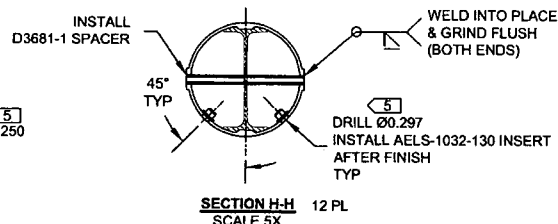
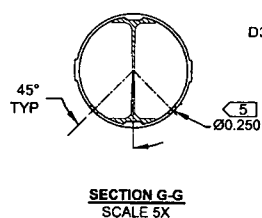
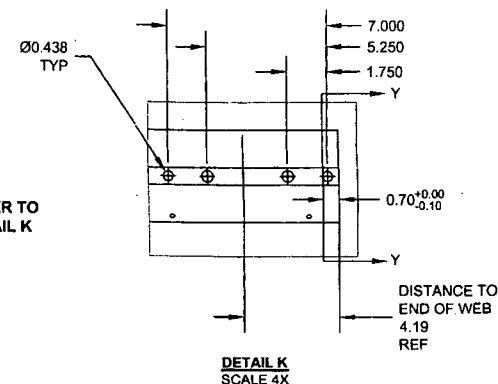
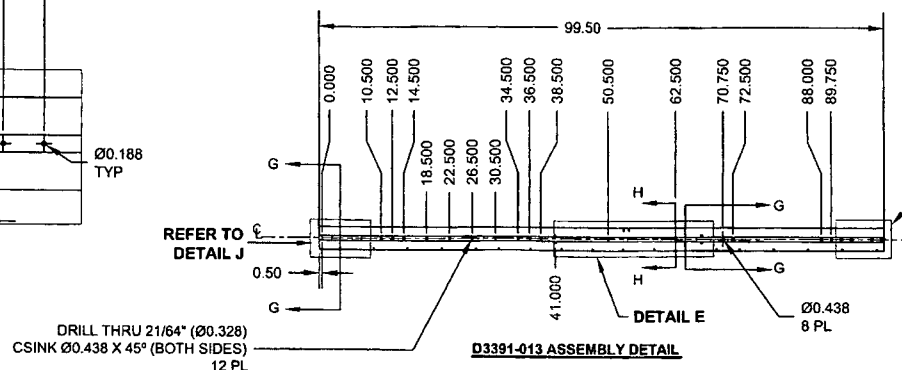
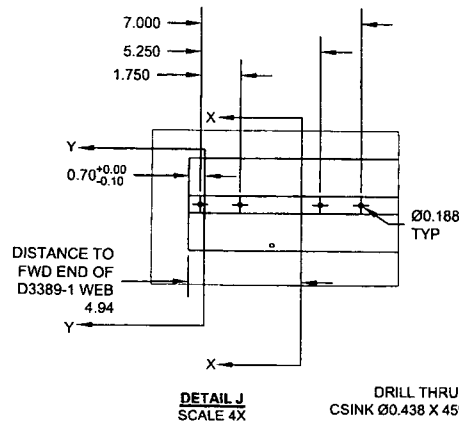
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**NOTE:** Date & initial all entries

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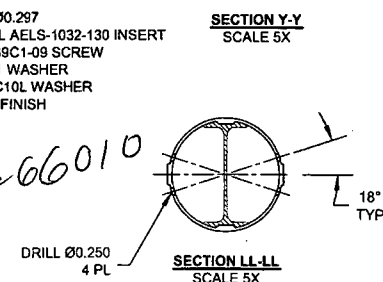
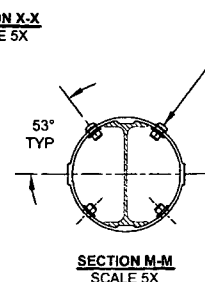
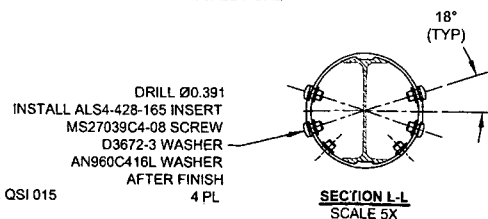
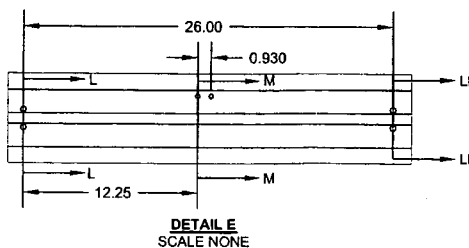


**D3391-013 MID TUBE ASSEMBLY PARTS LIST**

QTY	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW

**D3391-013 MID TUBE ASSEMBLY**

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004



**DEO ATTACHED** **RELEASED**

DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 5 OF 8
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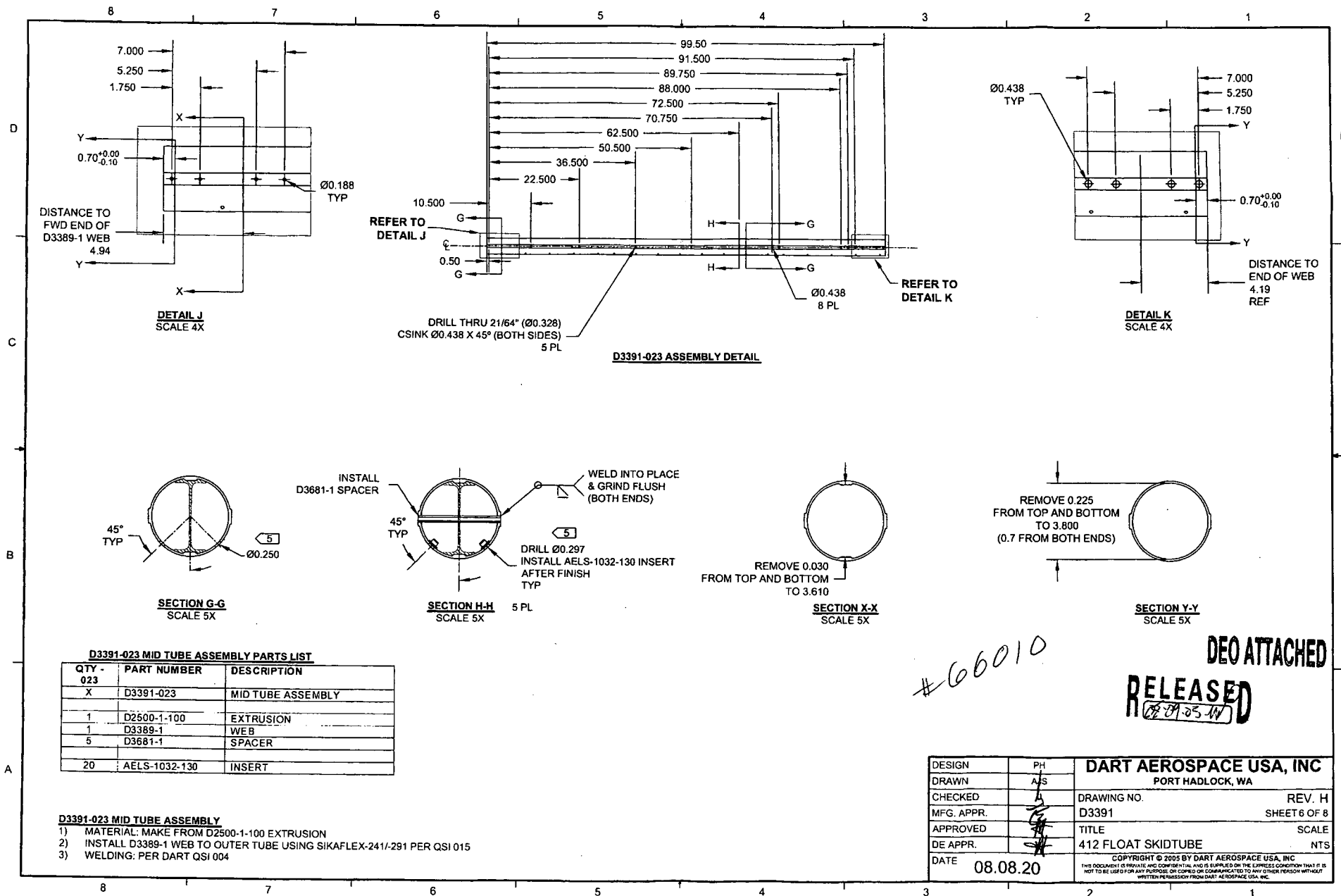
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



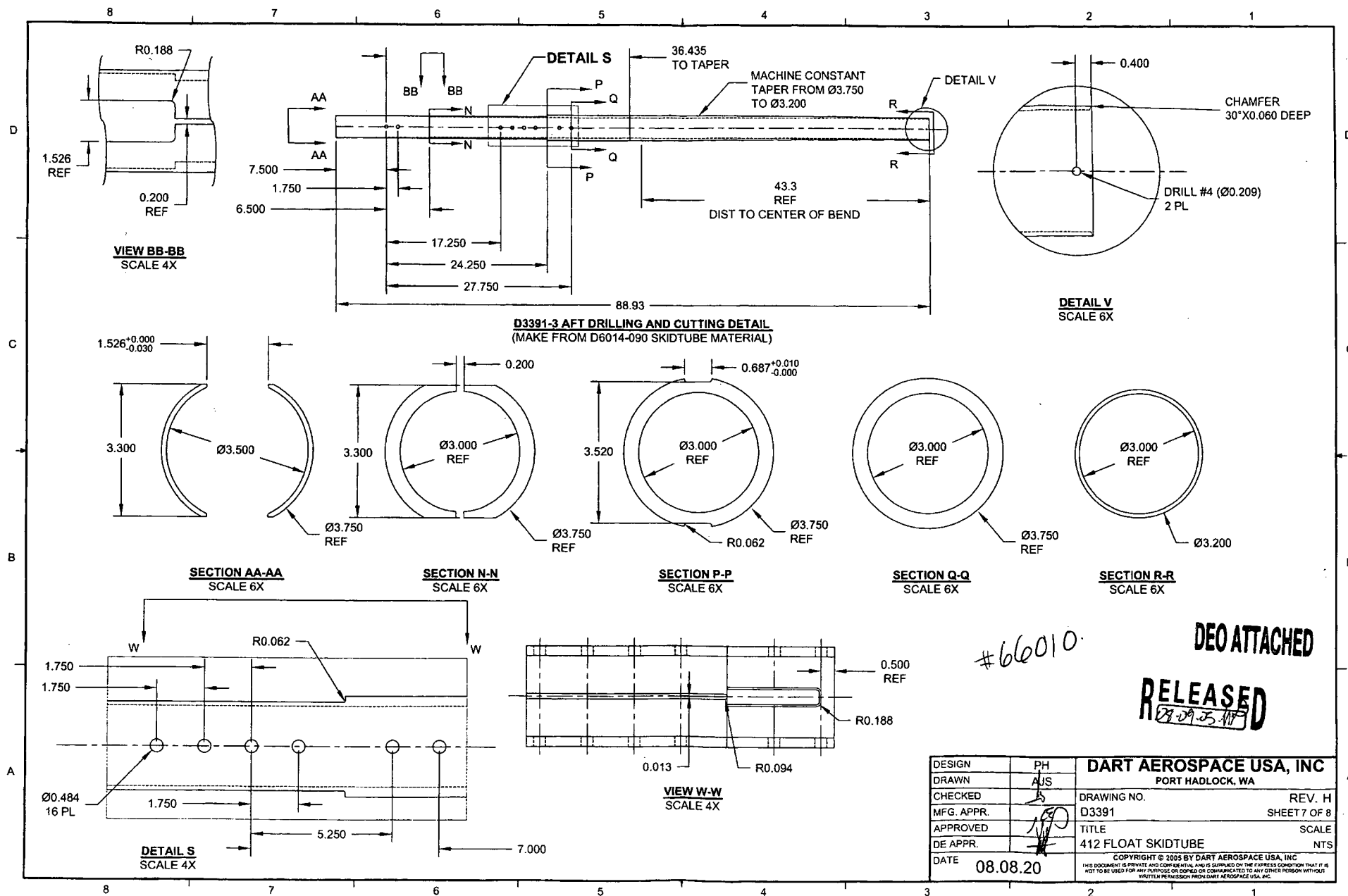
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



#66010

DEO ATTACHED  
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28-09-25-117

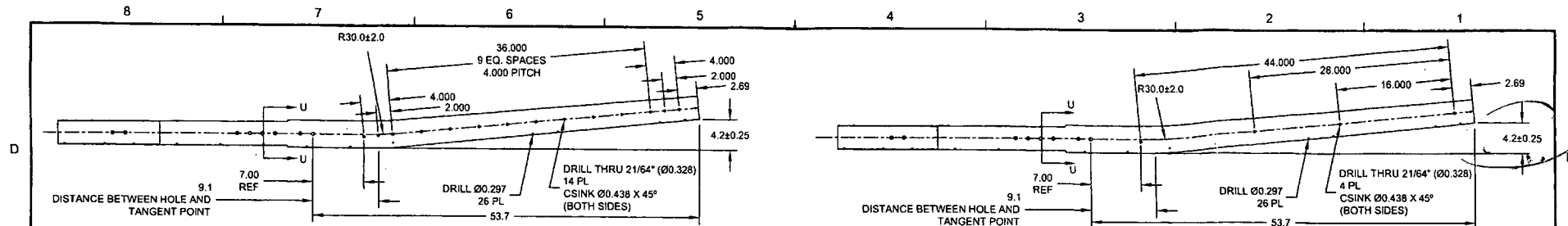
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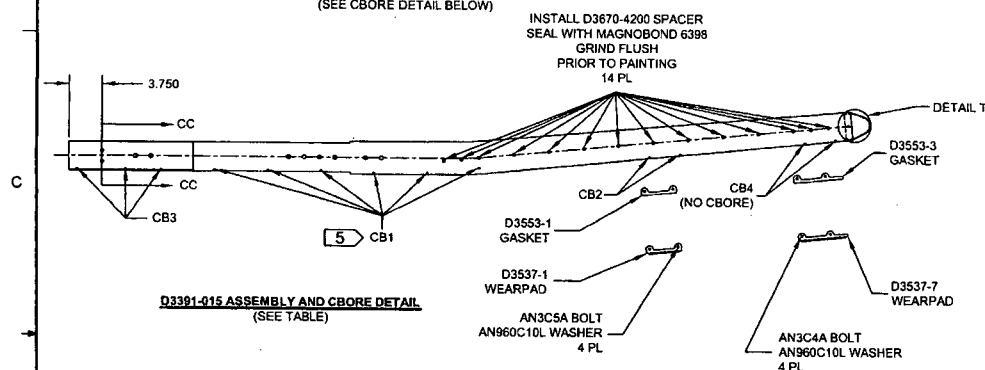
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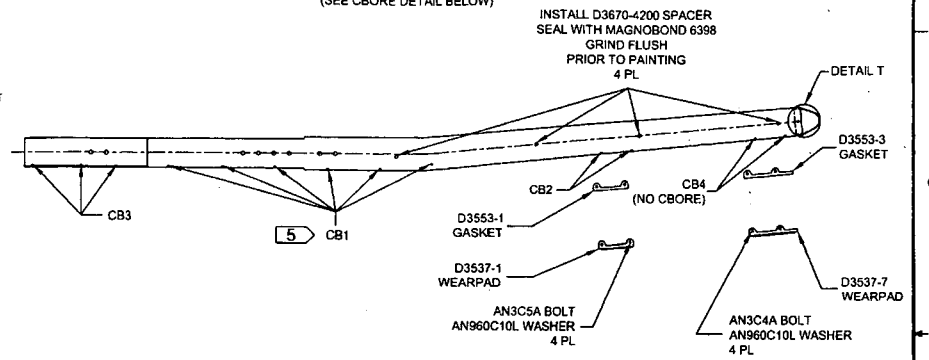


**D3391-015 BENDING AND DRILLING DETAIL**  
(SEE CBORE DETAIL BELOW)

**D3391-025 BENDING AND DRILLING DETAIL**  
(SEE CBORE DETAIL BELOW)



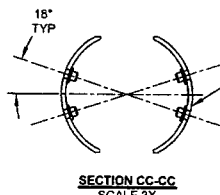
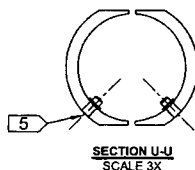
**D3391-015 ASSEMBLY AND CBORE DETAIL**  
(SEE TABLE)



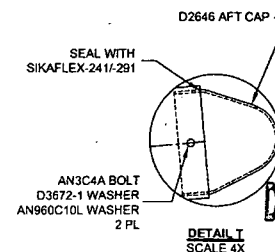
**D3391-025 ASSEMBLY AND CBORE DETAIL**  
(SEE TABLE)

**D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST**

QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X		D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4		ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER



DRILL Ø0.391  
CBORE Ø0.516 X 0.040 DEEP  
INSTALL ALS4-428-165 INSERT  
4 PL



CBORE HOLES MARKED CB1-CB4 AS FOLLOWS AND  
INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	12	12	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130

DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 8 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
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#66010

RELEASED  
08-09-05 MJD

DEO ATTACHED

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

DRAWING NO. D3391	TITLE 412 FLOAT SKIDTUBE	REV. H	DART AEROSPACE USA, INC ENGINEERING ORDER		D.E.O. NO. D3391-H-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>h</i>	MFG. APPR. <i>MA</i>	APPROVED <i>MP</i>		DE APPR. <i>MP</i>		
DATE 09.09.23	DATE 04.04.24	DATE 09/09/25	DATE 09/09/30		DATE 09/09/30		

**PURPOSE:**

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

**CHANGE:**

AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

- 2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH~~  
~~AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH~~  
 LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS  
 OFF POWDER COATING WITH MEK DEGREASER.

**RELEASED**  
 2010-02-02

*MP*

*#66 010*

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